

Transaction No. 60.

November 14th, 1901

F500  
H5

The Historical and Scientific Society  
of Manitoba.

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Insectivorous Birds  
of Manitoba.

BY

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WINNIPEG :  
THE STOVEL CO., PRINTERS,  
1903.

# The Insectivorous Birds of Manitoba

A paper delivered before the Manitoba Historical Society by  
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## INTRODUCTORY.

Accepted authorities define the term *insectivorous* as insect devouring, consequently, generally speaking, an *insectivorous* bird may be by any one of the thirteen thousand known species of birds which will occasionally devour a few insects, or, more accurately speaking, one of those few which feed exclusively upon insects.

To describe the local forms under the former generalization would be an extensive undertaking which is not seriously contemplated in this paper. While to accept the more exclusive application of the term we would have altogether less than fifty species to consider.

Being neither so general or exclusive in our acceptance of the definition we will accept the term as in general use among ornithologists and include in it those locally represented species of the four orders, *Macrochires*, *coccyges*, *pici* and *passeres*, and while an investigation of the principal characteristics of these groups may not be as extensive as a consideration according to the more sweeping generalization, it will be found to be much more extensive than a mere consideration according to the more exclusive application of the term.

The science of ornithology has of late years made immense upward strides in public favor through the revolution of the methods of ornithological investigation. Formerly it was considered necessary to be able to pursue and kill birds and preserve their dry skins with dryer data attached; but the impracticality of private working collections has forced itself so pronouncedly upon the student that the idea is being abandoned and in its stead that of one good public working collection available for study, while the student turns his individual effort to the study of the bird under varied conditions in the field, woods and aviary, is being daily more generally accepted. These collections differ from the old museum collection of stuffed birds prepared by the fossilized bird-stuffer in

that they consist of a series of skins of all plumages, ages and sexes of all available species with types wherever possible, mounted characteristic of the species, prepared and arranged under the direction of a scientific naturalist. A label attached to each specimen contains full data regarding locality and date of collection, measurements and other remarks of interest. The skins are arranged in trays in cabinets in close proximity to the display cases containing the mounted types. In this manner the full range of plumage as well as a certain amount of character (as much as can ever be shown in a mounted bird) is displayed for our benefit.

Live bird photography is interesting to the ornithologists to-day. They vie with one another in their attempts to shoot the bird with the camera even as they formerly vied with one another in their efforts to shoot it with the life-destroying gun.

For these reasons we cannot to-day confine our discussions of the subject in question to the systematically or economically scientific, but must in our life study blend these into the philosophical and aesthetic, considering not only the classification and economic relations of the forms under consideration but also their place in nature, their influence upon ourselves and our duty to them. Certainly no group of birds lays greater claim to consideration from these points of view than those to be dealt with in this paper.

## Classification.

Considering briefly the classification of what we have generalized as insectivorous birds, we will note the physiological characteristics responsible for this classification. First we find that the subject embraces the four highest orders of the avian world.

Order *coccyges* — Cuckoos. Toes 4, two in front and two behind; bill slender; skull light and thin; tail long; not adapted for climbing.

*Order pici*—Woodpeckers. Toes 4, two in front and two behind; adapted for climbing, bill strong, skull hard and brittle; tail feathers very stiff and pointed, acting as a support in climbing.

*Order macrochires*—Goatsuckers and Swifts. Feet small and weak, with little grasping power; bill small and short; mouth large, with, in some cases, hair-like nets at sides of gape, which act as insect traps; wings long and pointed; tail in swift spined, to support in clinging to a perpendicular surface.

*Order passerines*—Perchers. Toes 4, all on same level, three in front and one behind; hind toes long as middle, and usually longer than middle nail; tail feathers, 12.

Divided into sub-orders, *clamatores* and *oscines*. *Clamatores*, songless perchers. True fly catchers, ten developed primaries and fewer and less developed muscles in the syrinx or voice producing organ than *oscines*. *Oscines*, song perchers. Less than ten primaries, more muscles and much higher development in syrinx than *clamatores*.

#### Identification.

The problem of identification is one which presents itself as more or less insurmountable to the student of any life forms, and is responsible for a discontinuance of effort among many of the less enthusiastic, while with those to whom a certain knowledge of life is necessary for varied reasons, the first question asked the naturalist is where can we get text-books to tell us about these animals or birds, as the case may be.

The extent of the predominance of theoretical over the practical training in our modern educational system is responsible for many erroneous ideas, and in no branch of investigation are these erroneous notions more prevalent to-day than in nature studies, and this premature inquiry for text-books on the part of the student is a striking proof of the unpractical training received, while to awaken enthusiasm and interest in the practical side of the work seems an endless and thankless undertaking. In answering the foregoing question, I may say that your text-book or your ornithological friend who can introduce you to the birds is in the same position as your friend who can introduce you to a desired new acquaintance and you must exercise precisely the same judgment in your descriptions of a bird you wish identified as you would in the case of your description of the stranger you de-

sired to know. You must go among them and become acquainted with their individuality first and their color last.

Do not come in with a rush and ask: "What bird is it that is black and gray and has a long tail?" and expect the ornithologist to pick out of the hundreds of species, presenting thousands of different plumages known to him, the bird you saw, neither condemn your textbook because it fails to enlighten you as to which of the scores of black and gray long tailed birds you happen to have seen. Go back and see what shape and size the bird was, where he was when you saw him, what he did when you saw him, if necessary chase him, make him fly and describe his flight, try and note the call or cry he gives, then put this carefully in your note book, describing also where he is gray and where he is black, *be accurate as to color*, do not call blue gray or gray blue, and, if it is blue gray say so; then come to your book or your ornithological friend and the possibilities are you will learn the name of the bird and much of its life habits, and will know it in future from any other bird for the same reason that you know Mr. Brown from Mr. Jones.

Taking alone the question of variation in the groups under consideration, we may of many species secure a series of one hundred skins of different plumages in one season and the following spring or fall secure as many more before we have a thoroughly graded series of young, immature, breeding and winter plumages of the species.

Many birds such as our red-winged blackbird, bobolink, Baltimore oriole, pine grosbeak, purplefinch, rosebreasted grosbeak and many of the sparrows and warblers, take from two to four years to mature in plumage, the sexes at all ages differing also; while with the bobolink, goldfinch, longspur and many sparrows and warblers the adult males, females and young leave us in the fall all dressed in a uniform plumage, returning to us in the spring clothed according to age and sex. So that identification by individuality is the only solution of the vexed question. Some birds, like some people, wear the same colored suit winter and summer, adult and young alike, but these cases are rare among our high colored birds, the most striking being possibly the evening grosbeak.

#### Individuality.

The discussion of the question of practical methods in the identification of

birds has led us up to the question of individuality.

The mediaeval, selfish and presumptuous idea so generally accepted until recent years that man was the only creature endowed with higher intelligence has been thoroughly exploded, yet the weight of prejudice, that obstacle to progress, to-day prevents many intelligent people from accepting this truth; and not infrequently heresy, infidelity, lunacy and other terrible moral or mental conditions are insinuated of those who are bold enough to declare themselves believers.

These terrible possibilities, notwithstanding, we cannot, without prejudice, associate ourselves with the birds or mammals without being convinced that their intellectual conditions differ only in degree of development from our own. Who makes bold to say that birds are not possessed of individual character let him weigh well his substantiatory evidence against what may be offered in rebuttal. All birds show more or less striking individuality but the groups under consideration undoubtedly show the greatest intellectual development.

The question of making a private working collection has been previously referred to and shown to be impracticable save to a man of means with much time at his disposal and we must therefore depend upon the study of the life rather than the dry skin and gain access if possible to a good public working collection to extend our knowledge of specific variation.

The argument that these characters in birds held to be higher intelligences are but instinct and are inherited is supposed to be insurmountable, yet I shall challenge you in opposition to point out to me the line of division between instinct and reason, and failing to do this, I hold that reason is but an evolution of instinct. Have not our changing environments necessitated the exercise of our reasoning powers to enable us to keep pace with our everchanging struggle for existence? So as the change of environment and increase of the struggle of existence with the bird is proportionate with man's, will there be found a proportionately increased intellectual development? We have but to take some of those birds most persistently persecuted as obstacles to human progress to prove this phenomenal brain development. Examples—the crow and jay family, the English sparrow.

As a comparison take the members of the goatsucker family, which, because of

their nocturnal habits, have few natural enemies, and we find a comparatively small brain development and in the intellectual what may merely be called an "eccentricity."

Apart, however, from the revelations, of psychological or phrenological examinations, a short unveiling of our eyes from prejudice and the association of ourselves with these interesting subjects in life cannot fail to present these truths to us.

The examples of human characteristics I will show are:

*Memory*—As evidence of this we may but quote the return of birds regularly to an old nesting site. And some would ask, How do you know these were former nesters at this place? A nesting site



Bronzed Grackle.  
(*Quiscalus quiscula aenus*.)

being an attraction the first season is liable to be the same a second season. My striking experiences here were two. One case with the swallows, which raised a brood in a box I had erected. The box was blown down during the winter and was removed entirely, yet the morning after the arrival of the swallows the next spring the birds flew about the spot searching for the box, alighting on the roof where it had been placed, and, upon my bringing it out, and while re-erecting it, they were very much concerned and made as much objection to my presence as though they were nesting. In the second case a wren had nested in a hole in an outbuilding for two seasons. During her absence one winter the hole was covered entirely with a piece of board. On her return she sought long and hard for that hole, climbing about the board which covered it in her search and not for some time did she accept another site though they were quite numerous and equally favorable.

*Love*.—Birds love one another with all the ardor of human lovers, and, like enameled humanity, they show the same constancy or perfidy—the same spontaneous gush, while the character of the maidenly modesty is as varied as with our sisters.

Mr. Redwing Blackbird courts his plain looking affianced with a fantastic display of plumage, a gushing spluttering attempt at a song, which ends in an oath of "faithful unto death." Happy lover, he is accepted; his betrothed has failed to see his *duplicit*, and all is well till the nest is built, the eggs deposited, and then he grows restless and tired of his bargain, and it is with difficulty that he even awaits the appearance of the young before he is off in disgust with his chums to the Redwing Club in the big marsh, leaving the faithful wife to raise, feed and train up her family in the way they should go, and not until nesting is over and it is time to prepare for migration does he return to become acquainted with his family.

As an offset to this perfidy we can take the goldfinch, the bobolink, the sparrows and many others which remain faithful, assist in constructing the nest, and while on account of inability on the part of the males or the unwillingness of the mother to trust them, they do not assist at incubation, they remain about the nest cheering the patient mother with song, feeding her, and, on the appearance of the young, take a willing share of the responsibilities of family raising.

In direct opposition to the conduct of the redwing we find the rosebreasted grosbeak, the robin, oriole, bluebird, catbird and many others not only remain at home and help build the nest, but their wives insist upon their taking their share of the worries of incubation and subsequently of raising the family.

I know of but one case of the new woman among birds and that is Mrs. Wilson phalarope, who compels the male to do all the incubating and family raising while she goes off with her friends probably to talk woman's rights.

*Unity*.—Among the young men of the day the competition or rivalry for the attentions of their lady friends gives rise to much vain display. Similar causes give rise to similar emotions in the birds, and keen, elaborate and even fantastic are these displays. The very high rich plumage attained by many of our male birds is held to be the result

of the keen competition for the females, and not only before the females are these parades indulged in but before other males of their own species, before other species and very often seemingly in rehearsal and while quite alone they may be carried on.

Of displays of plumage and song combined, for birds are often vain of their voices, the bobolink, ovenbird, lark sparrow, fox sparrow, white crowned sparrow and Baltimore oriole may be mentioned as the most striking.

Of those which make elaborate song displays without so much regard to plumage we may mention our well-known robin, the brown thrasher, catbird, song and vesper sparrows.

While of those which, having no particular musical abilities and whose display of plumage is accompanied by a spluttering gush, the redwing blackbird before referred to, and, in fact, all the blackbirds, including the cowbird, whose efforts are possibly the most ludicrous, the woodpeckers and the goatsuckers.

The nighthawk's bold dash earthward with its accompanying quivering boom of which the poet has said:

"With widespread wings and quivering boom,  
Descending through the deepening gloom  
Like plummets falling from the sky."

Is but vain display.

The bowing and scraping ceremonies of the flicker are unique and characteristic.



Flicker, or Highholder.  
(*Colaptes auratus*.)

Of this latter bird Frank M. Chapman, in "Bird Life," says: "Much ceremony prevails in the flicker family and on these occasions there is more bowing and scraping than one often sees outside of Spain." The clothing does not make the man, however, nor does the plumage necessarily make the bird, for, to the accurate observer, *indolence* however dressed is *indolence*. And in striking contrast to the cheery and ambitious appreciation of their possessions or talents of the majority of our highest

plumage birds is the indolent and apathetic evening grosbeak. They don the mature plumage the first year and maintain it winter and summer alike; their voices are harsh and unmusical, their only efforts being a harsh screechy chirp or a low nasal wrangle. They are undemonstrative save in opposition, when they are most pugnacious, and their whole lives show a selfishness and general discontent with life which is striking and unique among Canadian birds.

The indolent selfishness of the evening grosbeak is of an entirely different character to the mean, low-lived selfishness of the cowbird, for the evening grosbeak, though seeming to find no pleasure in life but feeding, has not become so demoralized as to shirk the duties of life or try to shoulder the responsibilities of family raising upon other species. With him morbidity seems to have blotted out all the cheerful side of life and he is more to be pitied than blamed.

With the cowbird, however, the case is different, because their indolence has encouraged depravity of the most despicable character. The depravity of a father, while deplorable, is not as generally injurious to the race where the faithful mother is at hand to counteract it, but where that mother becomes so depraved as to desire to shirk the duties of nature the demoralization is complete. In this case the knowledge of right remains, strange as it may appear, and each succeeding generation of cowbirds with a full knowledge of their wrongdoing continue to follow the inherited depraved course, and nothing is more expressive of conviction of shame than the sneaking, skulking approach of the female cowbird to the nest, always of a smaller bird than herself, to deposit her eggs during the absence of the owner, and equally shamefaced is her slinking disappearance after the act is committed or upon the appearance of the owner of the nest. The squalling, greedy nestling which afterwards demands all the attention of the foster parents to the neglect and frequently starvation of the rightful heirs, is a striking example of the blubbering, bullying overgrown "booby," whose mother declares she is unable to control him.

The cowbird, notwithstanding this depravity, has many redeeming characteristics, and, if sufficiently strongly convicted of his demoralized social standing, could be made a good citizen of the avian world, and a realization of this fact almost forces me to exclaim, "Oh,

for a Luther to regenerate the morals of the cowbird."

In striking contrast to the shame of the cowbird at shirking her duties is the pride of many feathered mothers of the families they are raising. Note the wood pewee and most of the flycatchers, which bring the young all out and line them up upon a branch or fence rail, where they are taught their lessons in fly catching, patience and good manners. The observation of this performance is very amusing as well as offering a strong life lesson to many of us who need it.

Many bird mothers are too proud of their children, idolizing and spoiling them by satisfying all their desires. Of this class the young orioles, with their whining "dee dee dee," are conspicuous as spoiled babies and manage to engage the entire attention of both parents for some time after leaving the nest and do not appear to be anxious to learn to earn their own living. Another species of this character is the goldfinch, a devoted mother, but all too indulgent.

Some birds perform the duties of incubation, but beyond feeding, exercise no control over the young, and the squalling rabble of the young blackbirds is evidence of a coarse nature and general disregard for property and good manners.

For sociability we have but to look for a time at the swallows, the redpolls, snowbirds or pine grosbeaks and we will find not only sociability but considerable affection and consideration for one another. Even among large flocks their associations are always cheerful.

For sociability among different species we can take a walk into the woods on a winter's day, when the sun is bright, and we will find usually white-breasted nut-hatches, downy woodpeckers, chickadees and an occasional creeper or kinglet, if it be not too cold, all travelling about together in a merry party searching for food and indulging in a cheery conversation among themselves.

If you wish diversity of character in the individual you may consult either the crow or the jay, and if the former cannot satisfy you, the latter most certainly can. The brain development is phenomenal in these birds both for proportionate size and character. The cunning of the crow is proverbial, but if ever you lived with one and studied him one-half as carefully as he studies you, you will find a companionship congenial, instructive and amusing in the extreme. If ever bird was endowed with reason

these birds are, and the development of reason has been the result of a desire for self protection during the satisfaction of their uncontrollable curiosity. A lengthy description of the character of these birds is not permitted here, but a couple of references will be given in proof of their claims to intellectual recognition. A crow in my possession learned to hang what meat he did not want for immediate use upon a nail. On the removal of the nail he resorted to the subterfuge of hiding it and dropped it through a knot-hole in the fence. A dog in the next yard soon learned to look for this hidden portion of the corvian daily ration, and, in his impatience, showed his nose to the hole while the crow was feeding. A short period of corvian consideration resulted in a roundabout walk to the hole and a sudden sharp "jab" with the beak sent the surprised canine elsewhere for his pickings, and never again did that crow hide any of his meat in that knot-hole, but buried it where he could watch it constantly.

This is but one experience of many. For wit and humor as well as corvian curiosity and cunning, the jay has with us no equal. Watch him in the woods or try to follow him. He is here, there and everywhere when you least expect him. In his foraging perambulations he suddenly discovers a blinking owl, and immediately he yells, "Jay, jay, jay," and immediately, as though from the purgatorial regions, arises from everywhere the reply. The woods are alive with jays and pandemonium reigns for a time till the unfortunate owl has again escaped them. He is a vocalist of considerable ability, a ventriloquist, a cynic, a satirist, a humorist and sometimes

most profane. His vocabulary is as extensive and elaborate as our own, and Mark Twain has said his profane vocabulary is more extensive than that of any animal save the domestic cat. His powers of mimicry are such that you can never be certain that he is a jay until he calls "Jay," and then he speaks it out in such a tone of ridicule that you feel like a jay for not recognizing him. He is a good fellow at heart though a vagabond in action. Like man, he requires congenial company to regulate him, for at home attending to domestic duties he is most devoted, while with others of his own kind in distress he is most self-sacrificing.

The late Capt. Bendire, in his work on "Life Histories of N. A. Birds," tells a touching incident of a jay which had in some manner become totally blind and which was constantly guarded by a flock of brother jays, who daily provided it with food and led it back and forward from the stream to drink. Was ever human being more provoking and attractive at once?

To close on the question of character I shall simply refer to the examples of *industry and ambitious git* shown in the irrepressible wren, that model of bubbling and unrestrained energy. What an important position he seems to occupy as the father of seven or eight chattering juvenile wrens, and these keep him reminded of his responsibilities in their clamor for food.

The cheerful and less ostentatious but equally persistent energy of the chickadee, who has also six or seven babies to feed, and the matter-of-fact little nut-hatch, to whom time is grub and who, therefore, has not time to sing and simply gives you a passing glance as he wanders about the tree trunk crooning out his little nasal "Yank, yank."

#### SONGS.

The subject of songs of birds is in itself an exceedingly extensive one which cannot be neglected in the present case. With a reference to the various classes of bird music I shall devote a time to the character of songs. First we may speak of instrumental selections in the partridge's drumming and in the night-hawk's boom previously referred to. The telegraphic tattoo of the woodpeckers from bush to bush across fields and ravines or small bodies of water. The birds perch upon a hard dead branch in the top of a tall tree and the answering calls can be easily recognized on a quiet



Blue Jay.  
(*Cyanocitta cristata*.)

evening or clear morning. Of the three species regularly given to these methods of communication the distinguishing points of the rapping are easily recognized. In the downy woodpecker it is a long unbroken roll or tattoo. With the hairy it is a shorter and louder roll, with a more distinct interval between taps. With the yellow-bellied it is a short roll, ending sharply with five or six distinct raps. These calls seldom fail to bring corresponding answer from the neighboring woods or hills.

On the question of song the division of the order passes into clamatores or songless and oscines or song perchers is, as has been previously referred to, because of a difference in the development of the syrinx or voice producing organ. In the one case there are but two or three sets of intrinsic muscles while in the other there are as many as five.

The voices of clamatores, while not musical, are characteristic. The spluttering "pchings" of the kingbird, the sharp questioning whistle "what" of the great crested flycatcher, the plaintive "pee-a-wee," "peer" of the wood pewee, and the snappy "chehee" and "cheehee tura-lur-al" of the fidgety little least flycatcher are quite familiar sounds in the summer woods.

Of the vocal efforts worthy of note the clear rich ringing whistle of the Baltimore oriole is a welcome inspiration of romantic freedom rung from out the swinging branches of the summer woods. It is a whistle easily imitated, quite varied among individuals, though always characteristic. This is one of the birds misnamed by the early settlers, as it belongs to a group of the starling tribe and is not related to the old world orioles. The specific name galbula means orange and black, while the species is named after Lord Baltimore, whose colors were orange and black. Lord Baltimore is to be congratulated in thus having so attractive a feathered perpetuator of his name.

What man with emotion in his nature has ever listened without a responsive sentiment to the ecstatic melody of that "mad musician," the bobolink, as on irrepressible quivering wing he soars and floats about the June meadows, pouring from out the depths of his overflowing heart a continuous volume of tinkling, rollicking, jingling music to cheer his patient mate in the grass beneath him. Yet how few are influenced by this responsive sentiment.

The flute-like whistle of the meadow

lark is in effect second only to the bobolink. Its high, clear ring, indicative of wild freedom and unrestraint, has, if we take it, an inspiration to our morbid souls as the bagpipes to the *Heilander*.

Of our native species one author has set over a dozen songs to music. The western species is much more musical than the eastern, and one hesitates on first hearing it to relate the rich clarion to the lark.

The musical chorus of the Lapland longspurs so generally mistaken for snowbirds in changed plumage, carries with it a beautiful inspiration, as in flocks of countless thousands they whirl over the field or alight for an instant on the stubble or plowing, all the while pouring forth a continuous flood of music closely allied in character to that of the bobolink, but in a numberless chorus producing a merry jingling and chiming as of millions of sweet-toned bells in harmony blended and which but needs be heard to be appreciated. During the entire summer season the musical mechanism of the longspur seems to be uncontrollable at morning, noon, and even during the night; eating, bathing, resting or sleeping, the song continues without the slightest inconvenience to the singer.

Few have been privileged to hear the song of the snowbird which he sings at his home among the snow and ice. Only on two occasions have I heard a portion of it outside of my aviary, and the sensation conveyed I can never forget. My introduction to this musical feast, however, was some years ago in my aviary. It was in May, during the height of bird song. One chilly morning, as the first streaks of dawn crept across the eastern horizon, I was awakened by a song, the character of which was new to me and it conveyed a sensation totally unlike anything previously experienced. It was as though the untamable spirits of the elements descending upon the earth had stretched their harp strings over the babbling brook and struck upon them their wildest and sweetest strains.

As I listened, half dreaming, I suddenly realized that the song came from my aviary. The other birds (Plectrophenax nivalis.) still slept. I cautiously drew aside the curtain, and in the corner, perched



Snowbird.

(*Plectrophenax nivalis.*)

up on a stone in the water, sat the snow-bird, conscious only of his own association with the dawn and greeting the approaching day with his wild untamable melody. It has since been my privilege to hear this musical effort on many similar occasions, and it has never failed to impress me as when I first heard it.

Some birds sing almost constantly, day or night, feeding, washing, dressing, flying, and even sleeping, and their efforts have no set time. Others are quite systematic and have a season for work and a season for music, the song season always after the work is completed. To these belong some of our sparrows, and most noticeably the vesper sparrow. At such times he mounts a fencepost, branch or other elevation, and expresses to the world in song his thorough appreciation of the good things of life. Sung chiefly in the evening twilight, it is an inspired melody most pleasing and beautiful.

A mysterious atmosphere seems to surround certain birds, which, because of the regular repetition and striking character the song attracts general attention, while, search as we may, the singer is rarely located or identified. The white-throated sparrow and the Veeey or Wilson thrush are two birds surrounded by this mysterious atmosphere. The peculiar whistle of the former bird floating from out the depths of the swamp or from under the brush heap in the woods has earned for him a number of aliases as extensive as the range of the bird. "The peabody bird," "Hard tires Canada bird," and "the paddy whack" are some of these, and the variation is according to the interpretation of the song. The various conditions under which I have met and studied this original bird have resulted in my referring to him as the "bird of moods."

Upon his arrival in the spring, when the stamp of returning vitality is everywhere in evidence upon the face of nature, and his cheery clear whistle floats along in the morning breeze, it conveys to me his happiness in the words, "I've come back again," "back again," "back again," and I hasten to enter the wood to greet him.

As the advance-guard is reinforced, there is much squabbling and practical joking, resulting in hand-to-hand, or rather "beak-to-beak" encounters, after which the victor, mounting above his vanquished, with a thrill of true satisfaction pipes out his tune, which now says, "Oh, say, didn't I, didn't I, didn't I?"

Migration is past, summer begun, and as we float down the river past the dense impenetrable masses of low-lying scrub and you ask me what creature could live in that hopeless tangle, and even before I reply he has mounted a branch to have a look at us and pipes out, "Old Tom, Peabody, Peabody, Peabody." He has raised his family, exhausted the interests of the locality and reminded by chilly evenings and turning leaves of approaching blizzards, he calls to them, apparently with a tone of sadness, "We had, better move, better move, better move," and after a few weeks of scurry and flutter and wrangle among the brush and falling leaves he leaves us at last for another season. He seems to say, "Hard times in, Canada, Canada, Canada," and well he might say it if times were as hard as the frosts and ice he moves away from, but he never leaves us without that ring of assurance of "I'll be back again, in the spring, in the spring."

An aristocrat in manner and dress and a refined vocal artist is the handsome fox-sparrow. His song possesses many of the richer qualities of the Baltimore oriole and the rosebreasted grosbeak, and heard in chorus in April it is an inspiration of summer melodies.

The pine grosbeak, purple finch and crossbill are all worthy of mention among the feathered vocalists, being also among our richer plumaged birds.

The pine grosbeak's is the most striking song, the other being modifications of it.

It is somewhat muffled and mostly sung without opening the mouth, but it is a prolonged sweet warble quite in harmony with the confiding gentle and sincere disposition of the bird.

In the breeding season it becomes louder and clearer and flows almost continuously and irrepressibly from him resting, feeding, bathing or even sleeping.

As the bobolink is the mad musician of the meadows, so the rosebreasted grosbeak can be considered the orpheus of our woods.

Regularly distributed over our entire wooded country, one cannot in season travel far without hearing the rose-



Pine Grosbeak.  
(*Pinicola enucleator*.)

breast's carol, possessing all the rollicking character of the song of the robin refined into a rich sonata, expressive of joyous contentment with life and its duties, it can well be considered one of the star performances of the avian musicians.

Poets rave of their favorite birds, the skylark, the mockingbird and the nightingale, but if these poets were musicians and visited the Canadian woods in the summer song season they would be forced to accept the carol of the rose-breast as unparalleled in the world of woodland song for richness and purity.

There is a weird mystery enshrouding the song of the strike, and as we listen to his broken, guttural and varied but not entirely unmusical effort, the question arises in our minds whether he has learned it bar by bar from those smaller songsters he is wont to prey upon or whether he has swallowed it piecemeal with the victim. Certainly no such heterogenous combination of sounds ever had their origin in the musical mind of one bird. It does not appear to be a breeding song, nor a decoy call, for the bird is usually quite conspicuous while performing. I therefore suggest that it is either a mocking of the slain, or the undigestible spirit of his victims crying from out his wicked frame.



Red-eyed Vireo.  
"The Preacher."  
(*Vireo olivaceus*.)



Warbling Vireo.  
(*Vireo gilvus*.)

The vireos are all day and all summer songsters, and from the red-eyed and warbling vireos our two common breeding species flows a constant volume

of song from early morn till evening's shades close out the day. With the warbling vireo it consists of a prolonged musical warble, repeated at short intervals. With the red-eyed it forms a sort of rambling recitative, never ceasing save to swallow a morsel of food. Description is difficult, but one writer has called him the preacher and interprets his notes as saying, "You see it," "You know it," "Do you hear me?" "Well, do you believe it?" To me he appeared to be talking to himself for want of better company, and in his search among the branches and leaves he says, "Oh, dear, where is it?" "I see it," "I'll have it," "I've got it," "Snap," "Now, again."



Yellow Warbler.  
(*Deudorix aestiva*.)

To individualize the songs of the warblers would take much effort, time

and space, so that as warblers we will deal with them briefly as a family.

These gay and lively little feathered gems of the avian world are at once the delight and consternation of the field naturalist. Long after other groups are mastered there remain unsolved problems among the warblers. The variety of species is great, but equally great is the variety of plumage and song in the individual, in many cases making identification not only difficult but often impossible without collecting.

The warblers move in a body; are here to-day and gone to-morrow, and the blending of their varied and musical voices in chorus in the spring woods as the spangled choristers flit everywhere about, is as the harmony of invisible choirs.

The ventriloquist powers of the jay have been referred to, but he is not the only possessor of these powers, and the location of singers thus qualified is rendered exceedingly difficult.

The aesthetic and refined little ovenbird, who, as you roam through the deep woods, opens up apparently at a considerable distance his chant of "Teacher, Teacher, TEACHER, TEACHER, TEACHER" each repetition growing in volume, concluding within a few yards of you and causing the woods to resound amazingly for the size of the bird. You have heard his chant, but have you heard his love song? He has one, but is more exclusive with his audience. In the evening during the mating season, as silence reigns about his home, he will soar to the tree tops, and, floating down, pour forth a rapid ecstatic warble entirely different from his teacher chant, and which needs to be heard to be appreciated, and once heard is not forgotten.

strain of the fierce harmony of the elements, is the water-thrush, and you must go to his home where the babbling stream splashes the sides of his fair partner's nest in the solitudes of the woods if you would hear his ecstatic wild melody, and, hearing, you will consider the reward worthy of the effort.

While most bird songs are characteristic and original or imitative for purposes of individual gain, the songs of the catbird and thrasher are a combination of the mere musical portions of many native bird songs and those of southern species, with some strains of species never seen nor heard by the bird but which are inherited strains. These are frequently intermingled with the scream of a hawk or the cry of a bird in distress.

I never could agree that for variety and purity of tone the songs of the catbird were excelled by the idolized mocking - bird. The song of the thrasher differs only in volume and force.

The songs of The Canadian Mocking-bird, the wrens are (*Galeoscoptes carolinensis*) characterized as "Babble, squeak and chatter," and one cannot watch one of these models of



Water Thrush.  
(*Solurus novaboracensis*.)



Cat-bird.



A Group of Warblers.

Magnolia Warbler. Black and White Warbler.  
(*Dendroica maculosa.*) (*Mniotilla varia.*)

Myrtle Warbler. Black-poll Warbler.  
(*Dendroica pennsylvanica.*) (*Dendroica coronata.*)

Another musician of the wild, untamable type, whose music seems to be a

perpetual motion without wondering where lies the source of so much energy,

as they are never at rest and the song bubbles out like the continuous overflow of a gurgling spring.

Frank M. Chapman, in referring to the song of this diminutive irrepressible, says: "It is a wonderful outburst of song and the diminutive singer's enthusiasm and endurance even more remarkable." The song occupies about three seconds, and I have heard a wren, in response to a rival, sing at the rate of ten songs a minute for two hours at a time."

A rival of the wren in song, energy and endurance is the ruby-crowned kinglet, one of the smallest of our small birds, with a body little larger than a hummingbird. A vocal organ no larger

than ordinary pin heads, controlled by microscopic muscles, this tiny musician gives voice to a refined bubbling warble of several seconds' duration and of sufficient volume to be distinctly heard at a distance of two hundred yards in the woods, and is considered one of the most marvellous performances of the world of avian vocalists.

No student can forget the sensation of his first introduction to the song of the ruby-crown.



Ruby Crowned Kinglet.  
(*Regulus calendula*)

The thrushes occupy the head of the list from the scientific standpoint, and certainly from the aesthetic point of view they do not occupy an inferior rank as ideal birds. In their whole lives there cannot be found a shred of coarseness or frivolous vanity. Rich of plumage, they are of quiet colors, in harmony with their gentle and quiet lives. The musical performances are also in strict harmony with their other characters, and as musicians they rank as star performers in the avian chorus.

Reference has been made to the bobolink and rose-breasted grosbeak as stars of avian song, and without any inequality in rank, we may describe the difference in the character of the three efforts.

The bobolink's performances may be

considered the rhapsodies and rose-breasted grosbeak's the sonatas, while the music of the thrushes constitute the nocturnes of classical avian music.

Their voices possess a ventriloquial character, which, assisted by the undemonstrativeness of the singer, enshrouds him in a veil of mystery that lends a fascinating charm to the song and be-speaks a soul buried in an inspiration not of earth, enwrapped by a spirit of heavenly peace.

The Wilson thrush or veery and the olive-backed are our two local breeding forms, very numerous in all our woods. The ventriloquial powers of the former are very remarkable. One can hear the whirling "Veery, veery, veery," as distinctly at a quarter of a mile as at a few yards, and distance lends little change to the quality of the tone. I have stood within six feet of a veery singing and have been quite unable to locate the singer by the volume of song.

The song of the olive-backed is, in general character, not distinguishable from that of the hermit thrush, the difference of surroundings only lending the greater charm to the latter's effort.

The breeding range of the olive-backed is more general in the mixed woods of Manitoba, while the hermit confines himself more to the solitudes of the coniferous forests of the north, and here his marvellous musical performance may be heard in all its grandeur, reverberating through the rafters of Nature's evergreen temple. It is a rich flood of song, more animated and varied than that of Wilson's, and is altogether the performance of an accomplished and undemonstrative artist.

John Burroughs has said that the "Spheral, spheral," "Holy, holy, holy," of the hermit thrush heard among the evergreen forests is one of the most marvellous vocal renditions of the bird song.

There a sublime halo encircles him which earns for him the title of "The Spirit of the Pines."



Grey-cheeked Thrush.  
(*Turdus illicae*).

To comment upon bird song without



**Robin.**  
*(Merula migratoria.)*

ment of the thrush's, is yet an inspiration to us in the early spring as cheering and comforting as is the thrush's hymn in June.

#### MIGRATION.

The subject of bird migration is in itself a most extensive one, and has given rise to much discussion as to the cause and character of the movement. While it is not proposed to enter into any lengthy discussion of the question or elaborate any theories at the present time, we could not consider our subject dealt with without some reference to the migratory habits of the groups under discussion. It is a well established fact that for one reason or another the great majority of our birds have accepted the necessity of migration. With some it is solely a matter of food supply, while with others it is mainly a matter of temperature; with a third class, however, neither of these causes can be said to entirely regulate their movements and their erratic peregrinations remain inexplicable save as individual or specific eccentricities. These smaller forms it will readily be understood, being physically less capable of combating natural enemies than would larger forms and being persistently persecuted by these enemies, have the dual question of safety from enemies and provision of food supply to consider on their semi-annual journeys. The wing area of different birds, therefore, becomes a material factor in the movement. Blackbirds, being strong flyers and associating in immense bands, are enabled to avoid or oppose most of these enemies, while the swallows, being very swift flyers, are able to escape pursuers, so that time of movement is not a material factor with them and their migrations frequently continue during the day.

Other forms, as woodpeckers (where migratory), finches and thrushes, being usually strong of wing, occupy the day in feeding, and as the shades of night close down upon them a signal passes from flock to flock and they rise in a body to a great height and continue their flight, frequently for many hours under cover of darkness. In the clear spring or fall nights one can hear the tinkle of the bobolink, the cheep of the sparrow, or the whistle of the thrush, as the individuals keep in touch with the main body of the flock, and we cannot listen and understand these passing signals without wishing these nocturnal aerial strafed travellers god speed.

Favorable winds are a most important factor in the movement. I have watched eagerly for days for the return of spring migrants which were due and without a sign of their appearance until a south wind arose, and it did not blow long before it bore to my ears a cheep, a peep or a whistle, and then I did not need the morning's dawn to tell me that the sparrows and thrushes were here.

I have watched these same groups huddle together in the brush-heaps to avoid the first raw winds of autumn until a favorable wind prevailed, and then as I stood by the wood-side at night I would hear the signal passed, the leaves would rustle, the calls seemed to climb to the upper branches of the trees, and in a few minutes the receding whistle or cheep was all that was necessary to remind me that they were gone again, and that I must turn once more to the jay, the nuthatch, the chickadee and the downy woodpecker for my woodland associations and to the red poll and snowflake for my field companions.

The changing of winds and the falling of rain unite to form the most disturbing agent in bird migration, and while the prevalence of opposing winds stops migration almost entirely, it is not in any manner as disturbing an agent as the changing wind accompanied by rain. This opposing factor causes the birds to descend from the elevation and seek shelter at the nearest point, resulting in much confusion among the ranks.

In the crossing of large bodies of water at these times many smaller varieties and weaker flyers are overcome before reaching shelter, and their dead dripping bodies upon the shore tell all to add a tale of the tragic termination of both spring and life journeys. At these times lighthouses and other bright lights

assist in luring many individuals to their death.

Migration is strikingly characteristic in many groups. The movement of the nighthawk is one quite in harmony with the individuality of the bird. As the fall advances large flocks may be seen careering about high in the air, darting hither and thither without seemingly any particular body movement, but if you watch them for an hour or so you will observe that the body movement of the flock has a decidedly southern tendency, and in the course of a few hours they will have completely disappeared, to be seen no more for another season.

Some of our smaller species like the warblers, kinglet, nuthatches and wrens, unable to withstand the strain of prolonged flight or the break in the food supply, perform the entire migration, flitting from bush to bush and tree to tree, feeding as they travel, resting usually wherever night overtakes them, and in this manner they can cover the required distance in about the same time required by night flyers, which occupy the days feeding and resting.

The last class we will consider are the erratics or eccentrics which seem to have neither reason nor season for migrating, and one would suppose for breeding. Of this class the crossbill, pine siskin and Bohemian waxwing are conspicuous.

Authorities tell us that the American cro-bill breeds in February, yet I have records of collections of birds apparently migrants and far from favorable breeding grounds from January till December and have found none I could call birds of the year. I recognized no evidence of mating and the birds always possessed the same erratic tendencies. About Toronto I have collected crossbills from November till May about the parks and private grounds, while in Manitoba I have collected them from May till November, roving about the poplar bluffs feeding on buds and insect galls.

With the pine siskin I have in Ontario collected the birds from November until June moving about in flocks with no appearance of mating or nesting. In Manitoba I have collected them with trap and gun from April till October roving about the fields and even in the town streets in very large flocks. Their nesting sites are given as the coniferous forests and the season April and May.

I would not say that the Bohemian waxwing does not nest with certain re-

gularity, but if such be the case he is only regular at home. He has for many winters, however, absented himself entirely from us, irrespective of severity of temperature or amount of snow, which regulates the movement of some winter migrants and has suddenly appeared in large numbers in October and remained with us till late in April though weather conditions were normal. So far as we know him he is a true *Bohemian*.

#### ECONOMIC RELATIONS.

In presenting to the public the claims of any form of life to our protection, when the sentimental, aesthetic and every other argument availeth nothing, we can cause the most matter-of-fact to prick up their mercenary ears and become interested when we approach their relations to the pocket. Were all other claims of the subject in question set aside, the relation of our insectivorous birds to our vulgar selves from the standpoint of dollars and cents is more than sufficient to guarantee our every effort in their behalf.

While all forms according to nature's law are necessary to maintain a balance in nature, there are some forms the increase of which will greatly hamper our agricultural interests, while the abnormal increase of any form is sure to become injurious. With our insectivorous birds there is little danger of any abnormal increase because their natural enemies are sufficiently numerous to keep their increase normal and it remains to regulate their greatest enemy—man, so that this natural increase be not reduced, as at such a stage they occupy a very important position in relation to agriculture and horticulture.

With all the species represented in the four orders in question insects form a large proportion of the total food of the nestling, while the greater number require an almost entire insect diet even in the adult. In other species the additional food consists of large quantities of noxious weed seeds, and it is in comparatively few cases that the birds can be really considered injurious. Insect feeding birds capture all classes of insects, but the great majority of insect life as revealed by stomach examination proves to be of the most injurious character. Beneficial insects are generally either very large and aquatic or possessed of weapons of defence, as in the hymenoptera, or of pungent or distasteful odors as in many of the scarabideæ or

scavenger beetles, which possibly accounts for the small proportion of these forms found in stomachs examined.

In the first order the cuckoo, though considered a suspicious character because of his quiet gliding movements and retiring disposition, is nevertheless entirely insectivorous and one of the most beneficial species. His diet shows a decided preference for the larvae of the tussock moth and those hairy caterpillars so destructive to trees and shrubs, and which because of their hairy covering are avoided by most birds. I have found the cuckoo's stomach jammed with these hairy caterpillars and the coating pierced through and through with the needle-like hairs. Yet it did not seem to inconvenience the bird.

During the Tent caterpillar pest in 1894-5 through Ontario I found the cuckoo very numerous and industrious in his work of destruction among them.

Assistant Ornithologist Beale of the U. S. Biological Survey, reports in the examination of 16 stomachs taken during summer months 328 caterpillars, 11 beetles, 15 grasshoppers, 63 saw flies and 7 other insects. More may have been contained, but were too badly broken to allow of identification. Most of the caterpillars were hairy and belonged to those genera which live in colonies and feed upon leaves of fruit trees, while one stomach was completely filled with the Tent caterpillars. The beetles were all click beetles and weevils.

This is in itself a record worthy of our highest admiration and protection.

Of the order *pici* or woodpeckers, the construction is in every way adapted for insect destruction. Working among the tree trunks they are about the hiding places of many injurious wood and grain-destroying species. In almost every species of this group three-fourths of the entire food is shown to be wood boring beetles and caterpillars, while with the highholder the favorite diet is ants, which it takes from the hills on the ground. As ants are known to assist in the increase of the aphides or plant lice their removal is beneficial.

The red-head is accused of damaging

and stealing fruit, but as he is not numerous enough in Manitoba to materially affect us we need not discuss him at length, so that locally the group presents the strongest claims to our protection as the only agents able to keep in check many of the insect enemies of the forests.

The goatsuckers are a group which feed entirely upon insect life.

All their food is taken on the wing and consists of smaller and more obnoxious hymenoptera and diptera with moth or beetle that happen along, and I know of nothing but a unanimous feeling in their favor.

With passerines the order is so large and the families so varied that there exists more diversity of opinion and the families must therefore be considered separately.

The name flycatcher is in itself evidence of the insectivorous character of the group, and I hear no opposition regarding their beneficial qualities save that against the kingbird the charge of destroying honey bees or driving out smaller birds. The latter accusation I consider a libel straight, since the kingbird is not antagonistic save to

his enemies, and who among ourselves "love our enemies." The charge of bee-stealing has been investigated and not the most meagre evidence in its substantiation has been secured. I certainly never found a honey bee in the stomach of a kingbird, while all investigation shows that the majority of his food consists of May beetles, weevils, click beetles, wild bees, ants, grasshoppers, crickets, plant bugs and robber flies which are a parasite on the honey bee.



Hairy Woodpecker.  
(*Dryobates villosus*.)



Red-headed Woodpecker.  
(*Melanerpes erythrocephalus*.)



Kingbird.  
(*Tyrannus tyrannus*.)

It will therefore be seen that instead of being an enemy he is in reality a benefactor to the apiarist, for in many cases where to satisfy an accuser the birds have been collected, the stomach has been found to contain not bees, but their worst enemies. Even though he took an occasional bee, would you in your selfishness begrudge the boy an apple who daily protects your orchard from thieves?

Our native flycatchers are strikingly characteristic and their habitats vary from the open fields in the kingbird to the dense woods in the great crested flycatcher. The phoebe frequenting the dwelling of man and its outbuildings, while the wood peewee, small flycatchers select the orchard or lighter woods.

Our only true lark is the prairie horned lark, and this bird raises its young entirely upon insect food, while the additional food of the adult consists of noxious weed seed. In the aviary he invariably selects the smaller weed seeds, discarding the broken wheat kernels.

From a family with a clean record we pass to one against which many grave charges exist, some no doubt authentic but many others altogether unauthentic and unjust. A group of birds familiar through some of its representatives to us all in song, story and real life.

Much has been said against the crow, and even his satanic majesty must at times stand aghast at the sulphurous ejaculations against corvian acquaintance. He is accused of stealing corn, cereals, fruit, chickens, eggs and whatever he gets his eyes and beak upon or into. He destroys the nests, eggs and young of smaller birds, and has altogether a black record as well as a black plumage, and were it not for his craftiness and cunning he would ere long become a rara avis.

Much may, however, be said in his favor. He has an exceptional fondness for cutworms, and if he takes corn it is while in search for these pests, while if the corn be tarred it will not be taken before or after sprouting. He is an expert mouser and undoubtedly preserves much more grain than he destroys by

his keeping away the mice and gophers, and as hawks, owls, foxes and weasels and other natural enemies to the mice decrease with the advance of settlement, much credit is due the black renegade for his work in the field. His fondness for insect life is proverbial and we should not forget his redeeming qualities in passing judgment upon him.

The problem of the crow is not a new one. Much money and time have been expended in the accumulation of evidence and on experiments, with the result that save the discovery of a few preventatives against his depredations the matter is still no nearer solution.

Invariably the most carefully laid plans for his destruction are soon discovered by this semi-human or satan-inspired bird and sedulously avoided.

Naturalists Walter Burrows and E. A. Schwarz, of the U. S. Agricultural Department, in 1895 issued a hundred-page pamphlet on corvian investigations made by the department and summed it all up in the statement that they would not advocate any protection for one so thoroughly capable of protecting itself, all methods of destruction having proven futile, but for all "*the crow was not as black as he was painted.*"

Second only to the feeling regarding the crow is the diversity of opinion regarding the blue jay. An unprincipled, deceiving rascal and a coward, yet withal a gay dashing fellow who carries with him a charm we cannot fail to admire even in the midst of his reckless mraudings. All the good and bad points of his black brother's character are his, with more dash and possibly a trifle more deception. A jay will dash into a bush and give a cry of alarm at the approach of a hawk, and steal and eat the eggs or young of the brave little kingbird while it is engaged with the rapatorial intruder. He will sit and face a crying, distracted mother too small to interfere and will devour her babes before her eyes without a tremor save of delight at her suffering and satisfaction with his meal.

Notwithstanding these depreciating points, investigation has proven that 76 per cent. of his food is a vegetable diet, chiefly nuts, acorns and berries and a good proportion of the remaining 24 per cent consists of insect food.

To insinuate economic value in the blackbirds in the presence of the average farmer would mean to court immediate and possibly unhealthy hostilities.



Prairie Horned Lark.  
(*Otocoris alpestris  
praticola*.)

This possibility notwithstanding it is but justice to all parties concerned that the true relations should be made known. It is at once evident that the injurious effects of these birds are the result mainly of their excessive numbers, as is the case when any form becomes abnormally common. The blackbirds, being very prolific, allowing the responsibilities of life to lie lightly upon their shoulders, and being perfectly adapted to environment, have every reason to be thus numerous. The question arises whether the damage claimed to be done to grain is greater than wou'd have been committed by the insect life destroyed earlier in the season had the blackbird been left entirely out of the deal. Almost the entire diet of the young blackbirds consists of insect life, and this constitutes also a considerable portion of the adult food. As a striking instance of the insectivorous qualities of the blackbirds I know of no more persistent enemy to that pest of the canker worm, which, during the past two years, has committed so much havoc among our trees and shrubs, and old and young blackbirds waxed fat upon them for weeks.

The question of necessity of protection, however, need not be discussed at length now, because of excessive numbers. On the other hand, plots to exterminate would be hazardous, if practicable, because of the danger in their removal of the unchecked increase of even more injurious forms, and "it is better to leave well enough alone" for the present in this case.

When referring to the blackbirds it is not intended that the bobolink or cowbird shall be included, as these birds hold none of the black records credited to the blackbirds.

The bobolink, as we know, makes immense inroads upon the rice crops of the southern countries, but this does not interfere with us, as, while with us, his diet is almost entirely insectivorous, the balance being mostly weeds, and he



Rusty Grackle.  
(*Scholæcophagus carolinensis*.)

is not known to injure cereals or fruit, he is worthy as an economic agent of our ful'est protection.

While we may consider the cowbird a social degenerate, he nevertheless presents a clean record as regards feeding habits, and may be said to be of considerable economic value. The food of young and old consists in the majority of insect life, chiefly the more obnoxious and destructive varieties of flies and beetles, with a considerable proportion of grasshoppers, while the balance of the food consists of weed seeds.

The meadow lark is another species erroneously named by the early colonists, and is not a true lark, but belongs to the starling and grackle family. To deal with him, however, as we know him we must consider him one of the most generally beneficial species on our extensive list. He is at once one of our most familiar prairie birds and a general favorite. Stomach examinations, the only authentic evidence for or against a bird, prove that from his first arrival in the spring until his departure in the fall he is most industrious in his pursuit of injurious insect life. Living, as he does, a terrestrial life among the fields and meadows, and adapted, as he is physically, for insect hunting and destruction, there is no bird better fitted to regulate the noxious insect life over large areas where the greatest damage is being done. He is partial to grasshoppers, and as he usually has a large family of hungry larklets to provide for, we may readily imagine the immense number of these pests he devours. Other species taken as food are plant bugs (hemeptera), crickets, caterpillars and myriapods. The record of several hundred stomachs shows 78 per cent. of the entire year's food to be insect life, and as this is not easily obtained in December and January, even within the winter range of the birds, the record is a remarkable one.

The record of that brilliant songster, the Baltimore oriole, is one above reproach and worthy of consideration. Wandering as he does constantly among the upper branches of the trees, he leaves no leaf unturned and no branch unexplored, and caterpillars, flies, beetles, ants and moths all go to make up the bill of fare of adult as well as young Baltimore. A classification or determination of species destroyed show also that but a slight proportion represent beneficial species, such as floral fertilizers, but are rather obnoxious wood-

borer-, leaf and fruit eaters. His record with us shows about 80 per cent. insect food.

From the blackbird and starling group we pass to one of the most extensive and interesting families of birds beneficial to agriculture. The finches are represented in Manitoba by some forty species, and of these about one-half are sparrows. When you ask what is the common gray bird, I answer that it may be any one of about thirty species of finches which have a grayish plumage at some time of their lives.

The group cannot be considered so generally insectivorous as some other groups, as it contains some species which do not eat insects, because these



Redpoll.  
(*Acanthus linnaria*.)

our birds. The question of weed destruction is a very important problem to-day, and these winter-visiting finches, including the evening and pine grosbeaks, redpolls and snowbirds, do much toward the solution of the problem, as their food while with us consists almost entirely of seeds of these weeds remaining above the snow.

While these winter visitors constitute in themselves an extensive army in the demolition of these agricultural enemies, the sparrows continue the good work through spring, summer and fall, supplementing it with an extensive insectivorous diet, as the young of most

species are raised entirely upon this class of food.

The members of this family, because of their seed-eating propensities, are easily kept in the aviary, where their preferences may be noted without difficulty.

I have during the past four consecutive seasons kept an average of one hundred of these finches, representing some 18 or 20 species, and estimated that they destroyed about two bushels of noxious

Junco.  
(*Junco hyemalis*.)

weed seed every month, eating most of it while fresh and dry, digging up much of the soft sprouting seeds and cutting off daily the tender shoots and rootlets of whatever escaped long enough to grow. So that on the removal of the aviary inside for the winter nothing but the broken wheat kernels remained. As a general rule they do not touch the wheat, and while a few will eat oats occasionally the preference is for small weed seed, and the varieties preferred were mainly wild buckwheat, mustard, pigweed and kindred varieties.

These records substantiated in the field therefore, constitute a strong case in favor of the finches.

The swallows belong to a group entirely insectivorous, all the food being taken on the wing, so that if insectivorous feeding constitutes an agriculturally beneficial agent there can be no question (Pipio erythrophthalmus.) arise regarding the swallows.

The record differs with the waxwing



A Group of Sparrows.

Fox Sparrow.  
(*Passerella iliaca*.)

Song Sparrow.  
(*Melospiza fasciata*.)

Harris' Sparrow.  
(*Zonotrichia querula*.)

White-crowned  
Sparrow.  
(*Zonotrichia leucophrys*.)

White-throated  
Sparrow.  
(*Zonotrichia albicollis*.)

or cherry bird, as he is familiarly called, and many charges are made against him because of his fondness for fruit.

The waxwing labors industriously about our woods and orchards in pursuit of fruit-destroying insect pests. He raises his young largely upon an insect diet, but he is socialistic in his ideas and considers that a division of labor should be accompanied by a division of profits, and not only does he think thus but boldly acts up to it and takes his share of the fruit, greatly to the consternation of the horticulturist, who has been watching the development of his crops without giving any credit to his eccentric little feathered co-operator. He absolutely refuses to recognize the rights of man before his own and believes (if action is a criterion) that his own interests are nowhere second.

While the waxwing does devour a large quantity of fruit, the majority of it consists of wild varieties, and it does not in any sense counteract the good work done among insect pests.

Whether or not to break the monotony of discussion is the reason of the

arrangement of the shrikes among two insectivorous groups we need not argue, but suffice to say that we certainly do not think of accusing the shrike of being either a grain or fruit eater. Nor can our larger form, the northern shrike, be

considered insectivorous. He is as "a wolf in sheep's clothing," being a carnivorous feeder in the disguise of a percher. He is called the butcher because of his propensity for killing more than he needs for immediate use and hanging it up on a thorn or a crotch till wanted.

He cannot be considered numerous, and is rarely seen in bands of any numbers. He carries on considerable execution, no doubt, among small birds, but the injury thus done is offset by his equally persistent search for and destruction of mice. Experiments show that he will in the aviary take mice in preference to birds.

In the counteraction of a result of man's officious interference with nature's balance, he is an ef-



Cedar Waxwing, or Cherry Bird.  
(*Ampelis cedrorum*.)



Loggerheaded Shrike.  
(*Lanius excubitorides*.)

fective agent, as he will be found to be more numerous about the cities and towns during the winter months, where he carries on a persistent persecution of that imported and pestiferous house spar-

row. "And for this blessing may the Lord make us truly thankful."

For many years I had a great deal of respect for the smaller brother of the northern shrike and championed the cause of the loggerhead against many an opponent. But he broke faith with me when, on collecting a specimen near Toronto, I discovered that he had been dining on a Savannah sparrow, having the remains of the bird in his beak when collected. Though this threw somewhat of a pall over my former respect for him, I refused to pass judgment upon the species because of the depraved individual. I pursued my investigations more vigorously, but not again did I discover any trace of the cannibalistic propensities and consider that his work of destruction among injurious insect life is worthy of our commendation.

Similarly, as with the swallows, we may raise no argument regarding the beneficial character of the two succeeding groups, the vireos and warblers, if we hold that the exclusive insect diet is a beneficial character.

From dawn's awakening till the shades of night close round departing day these gems of avian production industriously and assiduously pursue their insect prey among the tree tops, about the branches and trunks and upon the ground. The warblers are specifically the most numerous group, and many species of both both groups are abundant in individuals. The amount of insect destruction carried on is very large.

Considerable criticism has been indulged in with reference to the virtues of our two beautiful songsters, the catbird and brown thrasher. Like the waxwing, they are accused of appropriating a share of the fruit they have labored to protect, and we cannot say that they are not justified. The remedy of this evil is simple, and, if followed by horticulturists, will save to them their cultivated fruits. It is well known that all these fruit-eating birds prefer wild varieties, so that if wild cherries, grapes, dogwood and elder are encouraged about the fruit farms the birds will be content to continue their insect destruction and accept the wild fruit as their reward. The Russian mulberry is a hardy prolific fruit tree, easily cultivated, and its fruit is a decided favorite among fruit-eating birds.

Whatever our difference of opinion regarding the catbird and thrasher, we

can have no such difference toward the wren. Whether or not his feeding habits are generally known, he is certainly a general favorite because of his sprightly disposition, but if you set out to investigate the character of his food you will be amazed at the quantity disposed of and the very injurious character of it. He takes a mixture of bugs, beetles and caterpillars three times a day and feeds heavily between meals. The character of the life destroyed is the most destructive and consists of evil-smelling plant bugs, weevils, wood-borers, leaf and click beetles, and the caterpillars are of the cabbage worm tribe. With a family of seven or eight hungry wrenlets to supply we are constrained to bow to this diminutive, irrepressible as the prince of agricultural benefactors and surround him with the halo of public regard and protection.



House Wren.  
(*Troglodytes aeden.*)

We next deal with four companion groups, all among the smallest of our small birds which associate together both at their breeding homes and in their travels. The chickadees, nuthatches, creepers and kinglets are all entirely insectivorous, but attract our attention less than the wren, because they are not as constantly associated with our civilization.

Brown Creeper.  
(*Certhia familiaris americana*)

They are, nevertheless, not lacking in interest and constitute a foraging party of considerable importance, as they travel together in small flocks at all seasons, except the season of nesting. The creepers and nuthatches scour the trunks while the kinglets and chickadees explore the branches and folded leaves for the lurking insect or its hidden larvae.

The last group to be considered is the thrushes and their claim as beneficial agents lies mainly in their efforts as forest protectors, as all, save the robin and bluebird, are mainly



White-breasted  
Nuthatch.  
(*Sitta canadensis*)

inhabitants of the deeper woods. Their chief diet for adult and young is insect life, and while they are fond of fruit in season they confine themselves to the wild fruit of the woods and in no way interfere with the horticulturalist.

Against the robin there is considerable feeling expressed at times regarding his fruit-eating propensities, but I do not

fancy this will ever become strong enough to overcome our regard for him as a favorite bird companion or cause us to remove our protective arm from him.

With the bluebird the claim is unchallenged because he does not eat fruit to any extent, living upon insect food at all ages and seasons.